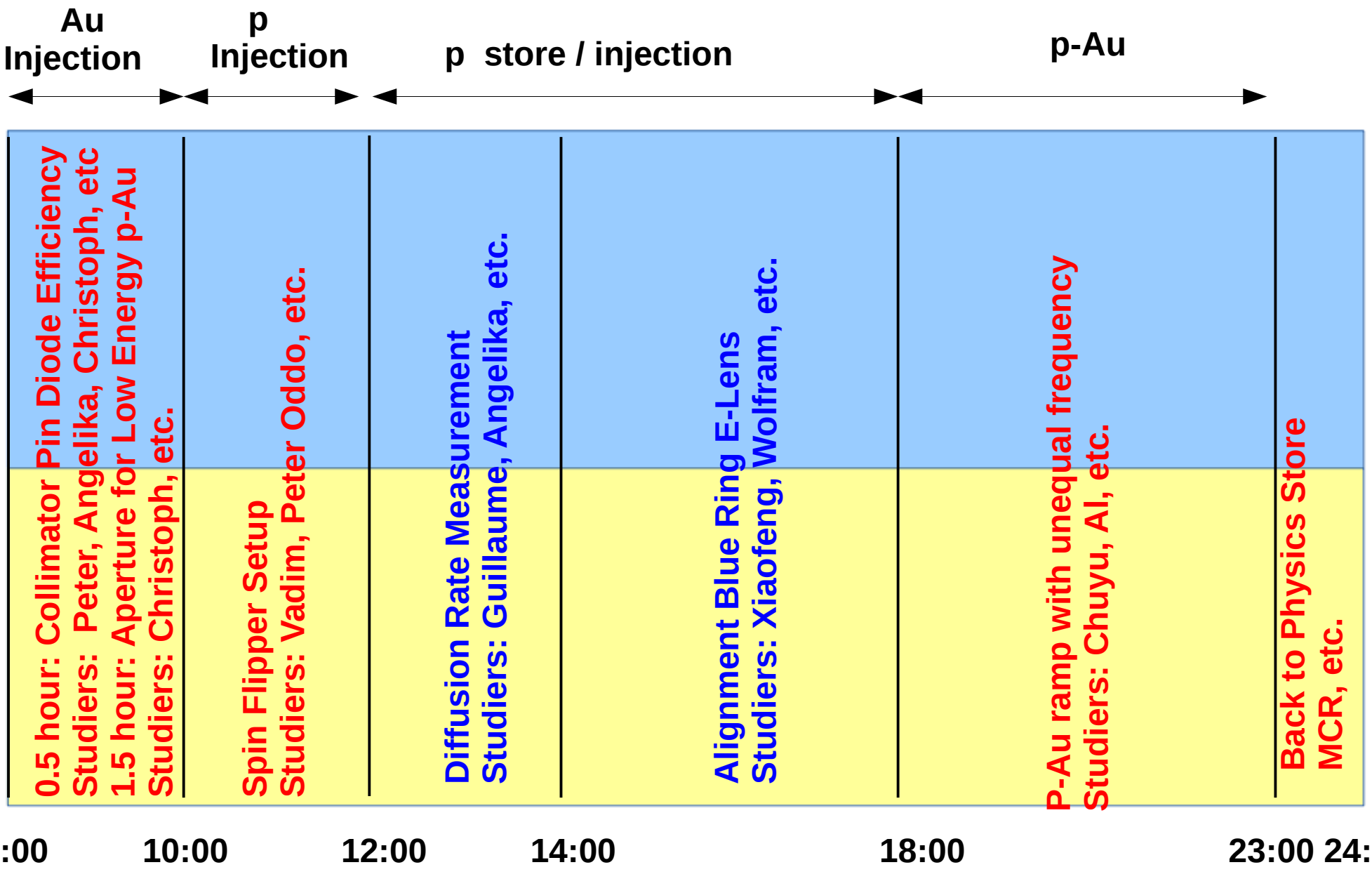
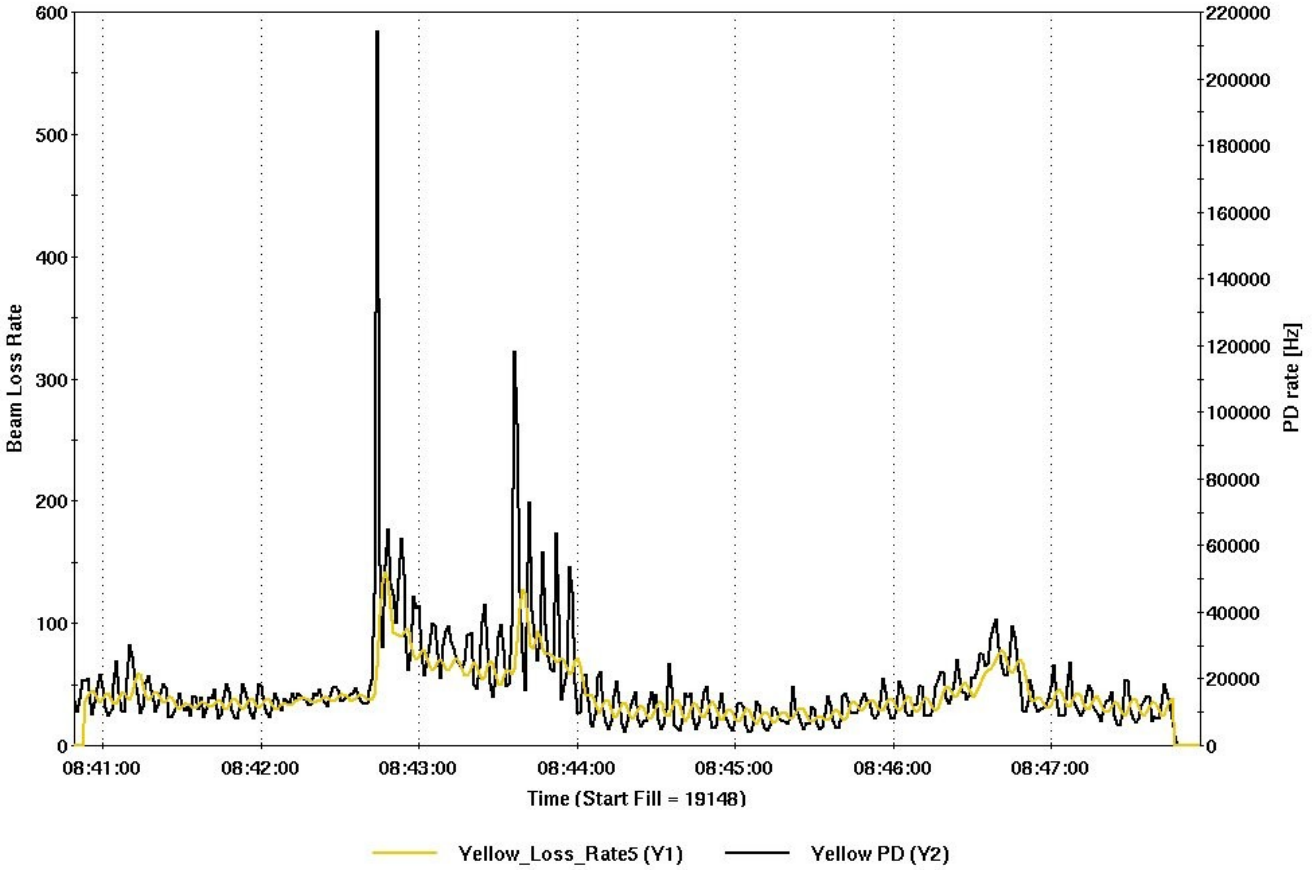
APEX Schedule for June 03, 2015



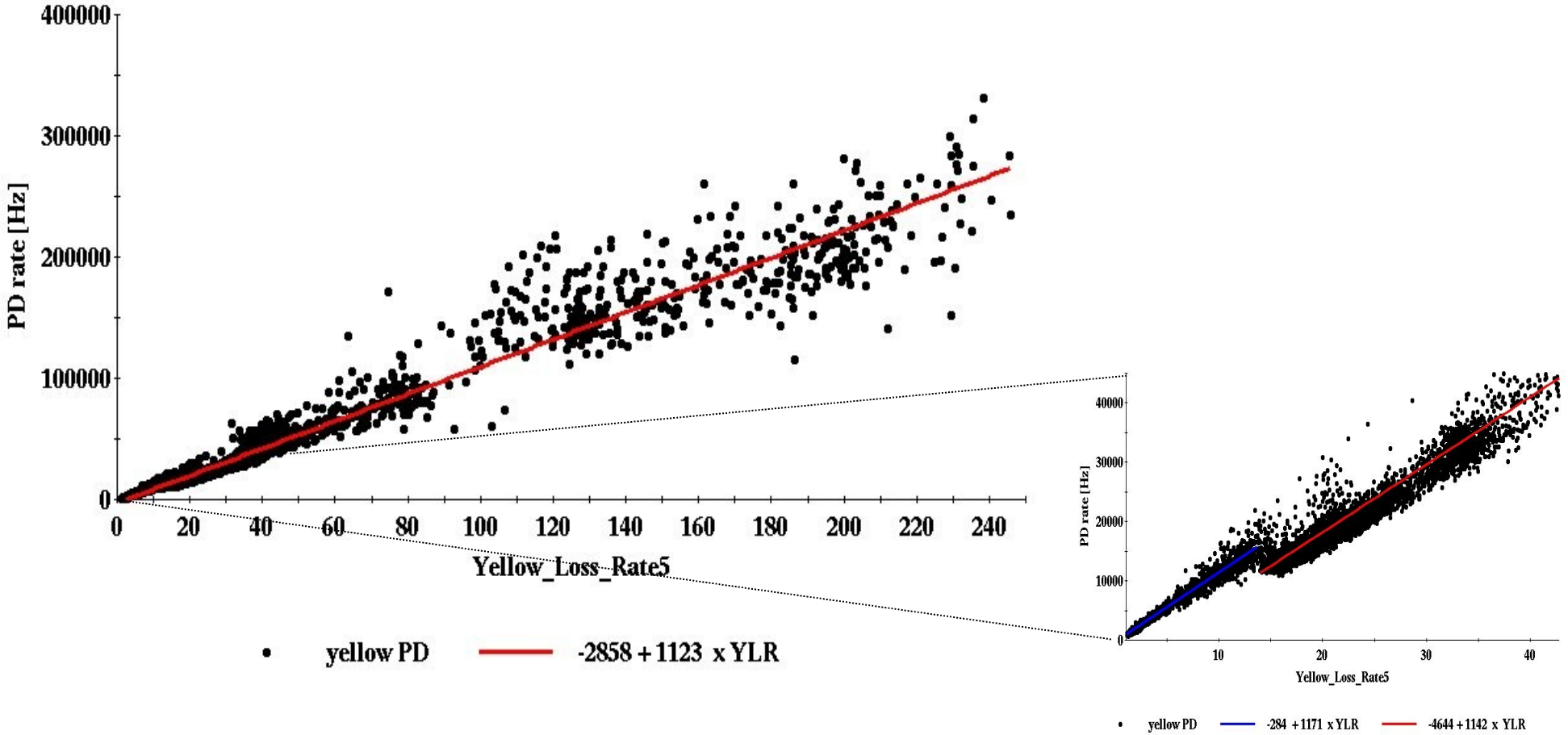
PD rates and beam decay

Angelika, D., Christoph M., Peter T.



Very good correlation at injection energy (but less data due to Pass failure)

PD correlation with loss rate (proton injection porch)



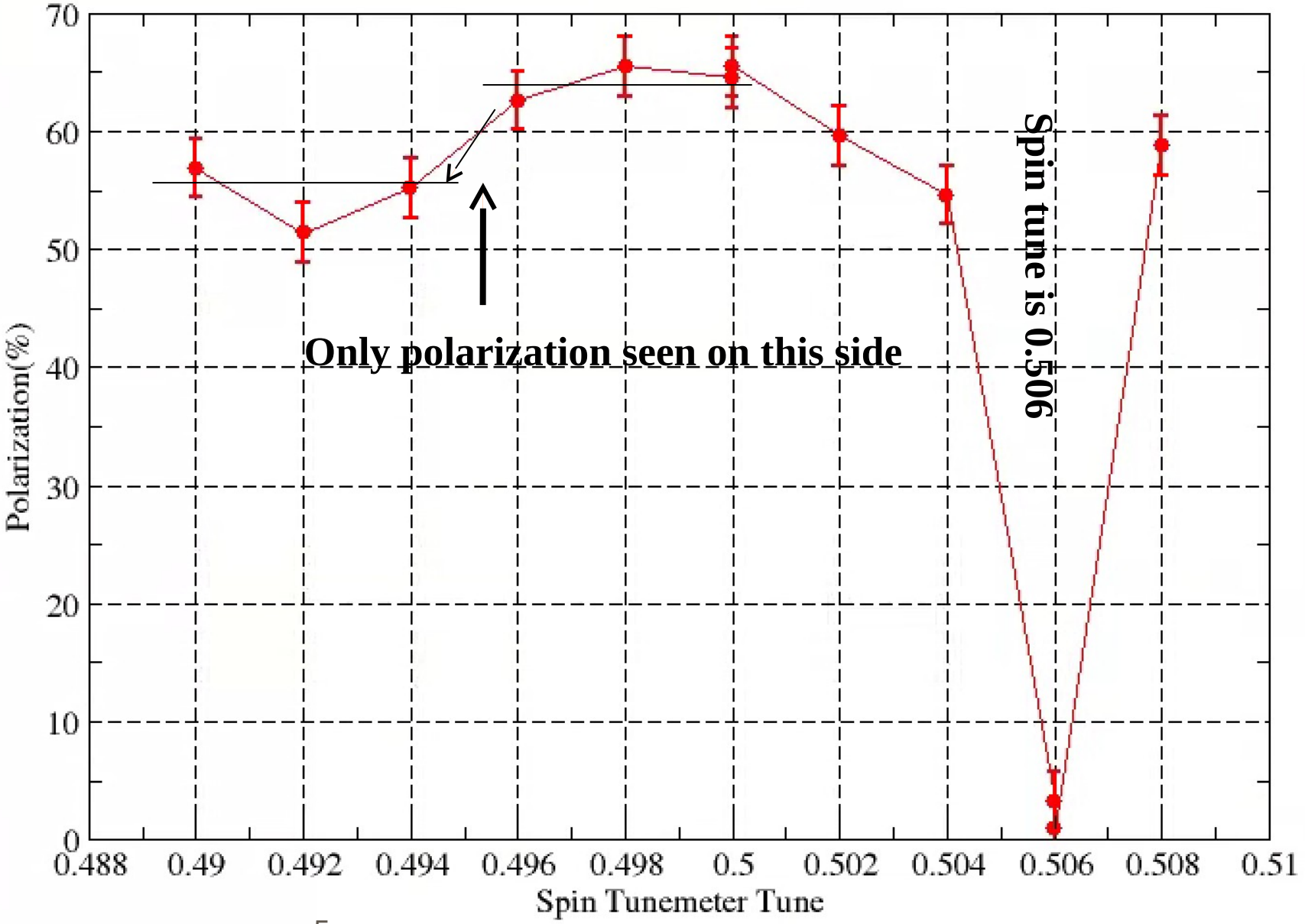
- Linear correlation over more than two orders of magnitude, from about 1.5%/hr to 25
- scatter could probably be reduced if the same data integration window would be use
- Zooming into the better lifetime area (inlet) shows a “jump” in the data of ~ 4000 Hz

Spin Flipper @ Injection

H. Huang, P. Oddo, V. Ptitsyn

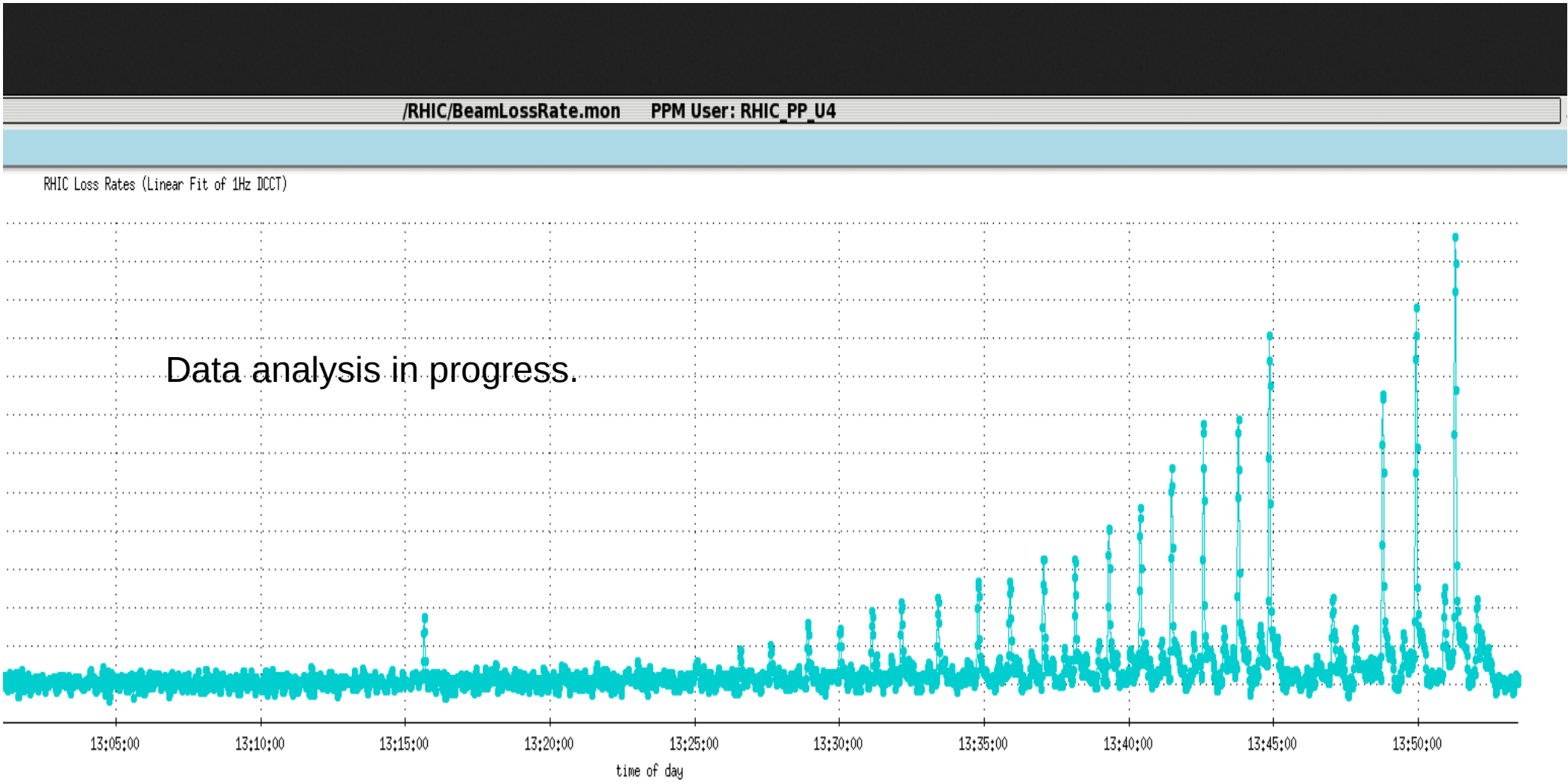
- We tested the DC magnet without orbit bump. There was not enough time to build a closed orbit bump. So we decided to set the DC magnet current to 600A. The beam loss is small for DC magnet current up to 600A. Then we turned off spin flipper and fill the RHIC with 28 bunches.
- Polarization did not change with spin flipper on and tune at 0.5. Sweep spin flipper tune between 0.49-0.51in 3 sec depolarized beam.
- We then take polarization measurements after spin flipper tune set at constant value for 3 sec then off.
- The orbit bump is reasonably closed, so that there was not much polarization loss at $1\text{-}Q_{spin}$, but it gave us some hint on the location of spin tune on the opposite side.
- We ran out time to do smaller steps near the spin tune to get spin tune spread information.
- Due to limited physical aperture, all spin flipper exercises were done at store. This is the first time we could do it at injection.

Spin Tune Measurement at Injection



Diffusion Rate Measurement

Guillaume, Angelika



Data analysis in progress.

Scraped beam down to 3 sigma.

Blue E-lens Alignment

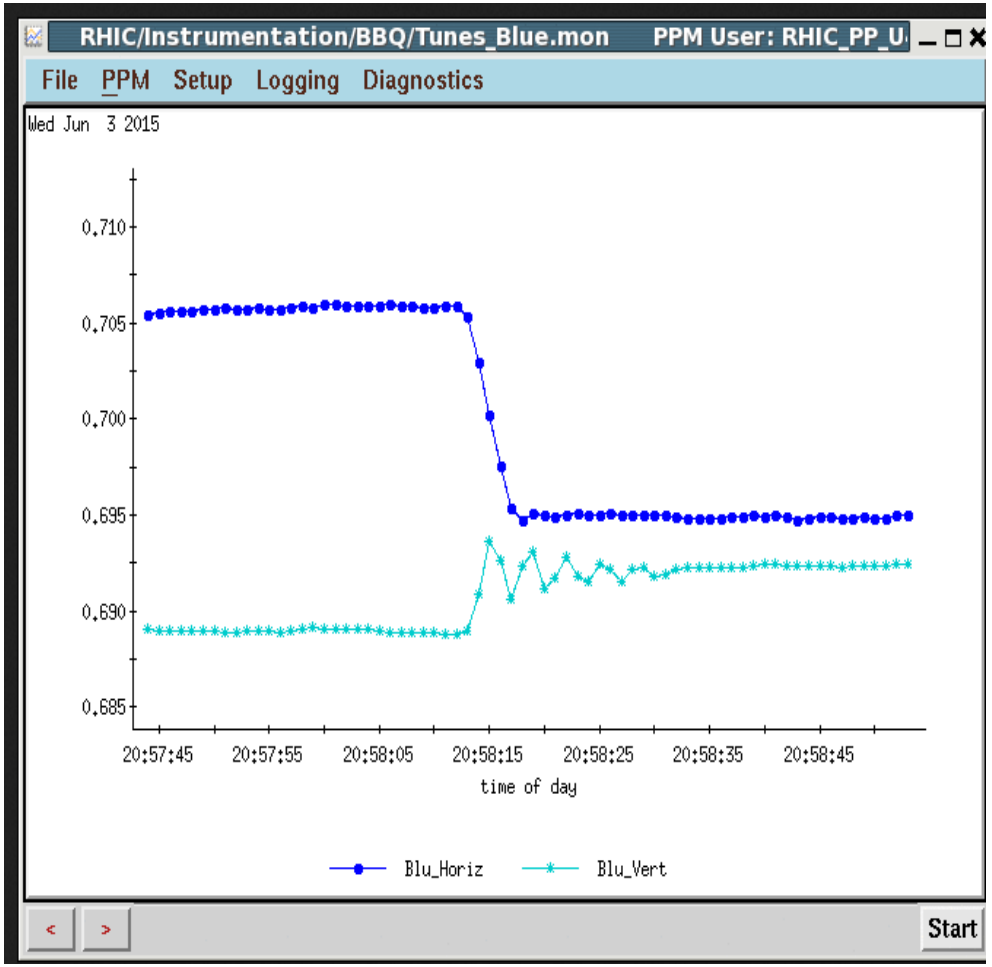
Xiaofeng, Wolfram, Al, Chuyu, Peter, Michiko

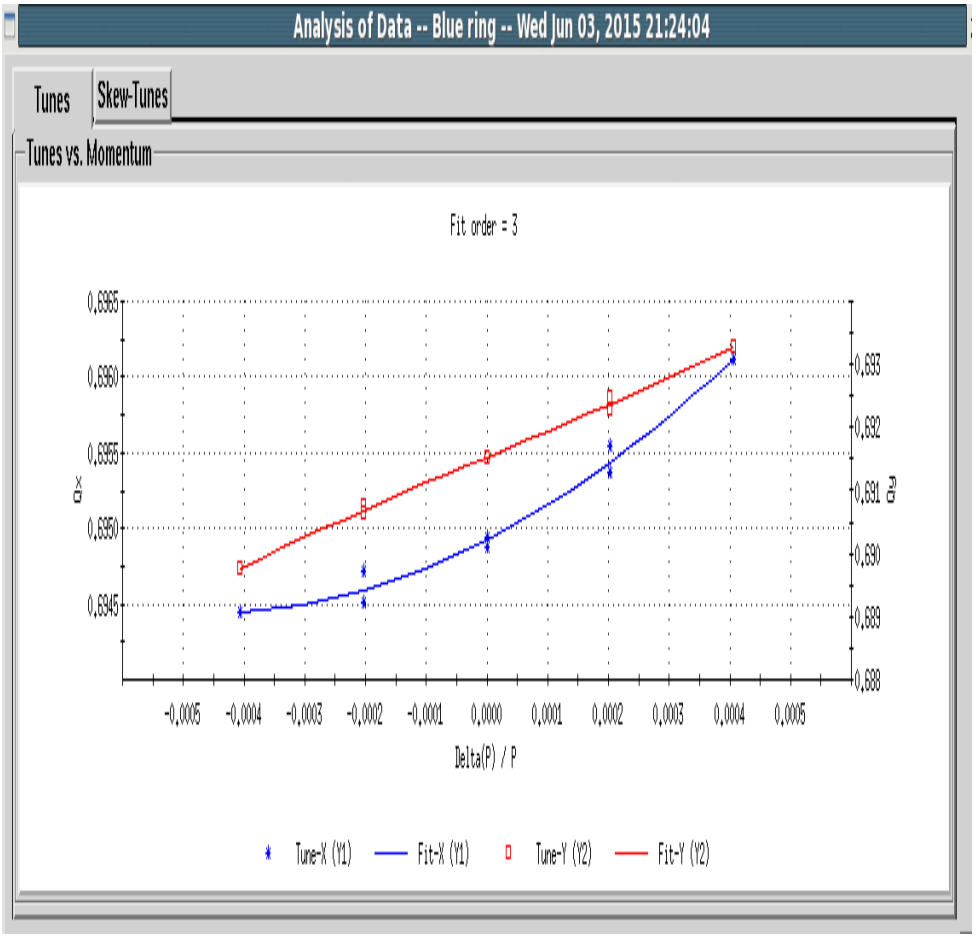
1. e-beam has different initial angle (0.85 mrad) with p-beam angle (-2.4 mrad after reduce proton beam angle). This is different from previous pp run. Finally, we only get -0.53 mrad with 45 A long corrector.
2. p-beam should keep 5 mm vertical bump
3. short corrector 3 didn't accept setpoint. Short corrector 5 accept setpoint and change both two bpm offset.
4. reducing GSB current from 700 A to 320 A can move e-beam to from 0 +10 mm and don't need to change csx.
5. Lisa still moves proton beam position from -10 mm to 10 mm vertically and horizontally from 15mm to 5 mm at least.
6. Move position first, then angle.
7. Injection or store (more eBSD signal?)
8. Plan: move e-beam angle during next Wednesday and save setting.

æ 18:47:cp **End of e-lens studies.** Aligned the Blue electron lens beam with the proton beam at injection and store. Blue orbit angle was 2 mrad at injection and 1.8 mrad at store. The store angle would allow storage of Au beam in the Yellow ring, i.e. the Blue electron lens could in principle be used in p+Au. -Xiaofeng, PeterT, Chuyu, Al, Wolfram

P-Au ramp development with unequal frequencies

Chuyu, Al, GRD, Angelika, MCR





Protons were injected and captured. Quenched snake magnet without snake bumps.

Notices

- Last APEX session this run:

  June 17, 2015, 16hours, 8am to midnight

  Beam time request, this Friday 10am LCR

- End-of-run Party :

  Monday, June 22, 5-7pm

  Please make contributions.